

werp Tertiary deposits, seems to warrant the assumption that there existed previously, along the Suffolk coast, a Miocene and a Pliocene deposit, the one abounding in terrestrial Mammalian remains, as the Epplesheim strata, the other in Cetacean fossils, as does the Middle Crag of Antwerp, and that the Red-Crag sea (and the Coralline also to a less extent) has entirely denuded and partially redeposited these strata in association with its proper Molluscan fauna, and perhaps with some Mammals, which, however, we are not able to designate.

Before concluding this paper (for the errors and defects of which I beg the reader's indulgence), I would wish to guard against the supposition that any of the Mammalia assigned to the Red Crag may have been obtained by mistake from the Mammaliferous Crag. That deposit is never, so far as I am aware, met with in superposition to the Red Crag; and the dental remains from it are light, absorbent, and unmineralized, as compared with those from the lower bed. Moreover the species are very widely different which occur in the two, the only common species being the *Mastodon angustidens*, which in both cases is certainly a derived fossil. The term "Mammaliferous" would doubtless be more appropriate to the Red Crag than it is to the much later Norfolk formation.

EXPLANATION OF PLATE VIII.

- Figs. 1 & 4.* Left upper canine of *Ursus Arvernensis*, Croizet & Jobert. Newbourn, Suffolk.
Figs. 2 & 3. Otic bones of *Delphinus uncidens*, Lankester. Woodbridge.
Fig. 5. Left upper premolar of *Castor veterior*, Lankester. Sutton, Suffolk.
Fig. 6. Incisor of the same. Suffolk.
Figs. 7 & 8. Left second premolar (lower jaw) of *Hyæna antiqua*, Lank. Felixstowe.
Fig. 9. Crown of premolar of *C. veterior*; enlarged.
Fig. 10. " " " *C. Canadensis*.
Fig. 11. Canine of *Canis primigenius*, Lankester.
Figs. 12 & 13. Teeth of *Delphinus uncidens*, Lankester. Felixstowe.
Figs. 14, 15, 16. Tooth of *Phocæna orcoïdes*, Lankester. Near Sutton.
Figs. 17 & 18. Ditto. Ditto.

XL.—Note on the Gibbon of Tenasserim, *Hylobates Lar*.

By Lieut.-Col. S. R. TICKELL, in a letter to A. GROTE, Esq.*

I SEND a transcript from my Mammalian collection of what I had recorded of *Hylobates Lar*, at least of its wild and tame habits. Notes on its osteology, and soft anatomy, and structure you will not require, as you have a specimen by you, which I

* From the Journal of the Asiatic Society, No. II. (1864).

suppose, from what you say of its paralysis, will not live long. The one you have must have been about a year and a half old when I sent it you. Doubtless captivity has checked its growth. I give the dimensions taken of an adult one; but I think I have seen them larger, and the males are larger than the females (as in all monkeys).

The Burmese and Talains never keep Monkeys of any kind as pets. The Karens sometimes do. Of the Shans I cannot speak, but being Buddhists they probably do not either.

Hylobates Lar (Ogilby).

The *Hylobates Lar* is found in great abundance in all the forests skirting the hills which run from north to south through the province of Tenasserim. They ascend the hills themselves up to an elevation of 3000 to 3500 feet above the sea-level, but not higher, and are usually met with in parties of from eight to twenty, composed of individuals of all ages. It is rare to see a solitary one; occasionally, however, an old male will stay apart from the flock, perched on the summit of some vast tree, whence his howls are heard for miles around. The forests which these animals inhabit resound with their cries from sunrise to about 9 A.M., the sounds varying from the deep notes of the adult to the sharp treble of the young ones. During these vocal efforts they appear to resort to the extreme summits of the loftiest trees, and to call to each other from distant parts of the jungle. After 9 or 10 A.M. they become silent and are engaged feeding on fruit, young leaves, buds, shoots, and insects, for which they will occasionally come to the ground. When approached, if alone, they will sometimes sit close, doubled up in a thick tuft of foliage, or behind the fork of a tree near the top, so screened as to be quite safe from the shot of the sportsman. But indeed, when forced from its concealment and put to flight, the Gibbon is not easily shot. It swings from branch to branch with its long arms, shaking the boughs all around, flings itself from prodigious heights into denser foliage, and is quickly concealed from view by intervening trees.

If hit, there is no animal more tenacious of life, and its efforts when desperately wounded to cling to the branch and drag itself into some fork or nook where to hitch itself and die excite amusement and compassion.

The Gibbon (if we restrict that name to this species) is not nearly so light and active as its congener, *H. Hoolock* (the "Too-boung" of the Arakanese), which latter species is not liable to vary in colour, being always black, with the hands and feet concolorous, and the supercilia only white, instead of a circle of that colour all round the face. The Gibbon, moreover, walks

less readily on its hind legs than the Hoolock, having frequently to prop and urge itself along by its knuckles on the ground. In sitting it often rests on its elbows, and will lie readily on its back. Anger it shows by a fixed steady look, with the mouth held open and the lips occasionally retracted to show the canines, with which it can bite severely; but it more usually strikes with its long hands, which are at such times held dangling and shaken in a ridiculous manner, like a person who has suddenly burnt his fingers. It is, on the whole, a gentle peaceable animal, very timid, and so wild as not to bear confinement if captured adult. The young seldom reach maturity when deprived of liberty. They are born generally in the early part of the cold weather, a single one at a birth, two being as rare as twins in the human race. The young one sticks to its mother's body for about seven months, and then begins gradually to shift for itself. So entirely does this animal confine itself to its hands for locomotion about the trees, that it holds anything it may have to carry by its hind hands or feet. In this way I have seen them scamper off with their plunder out of a Karen plantain-garden in the forest.

I have had many of these animals while young in confinement. They were generally feeble, dull, and querulous, sitting huddled upon the ground, and seldom or never climbing trees. On the smooth surface of a matted floor they would run along on their feet and slide on their hands at the same time. By being fed solely on plantains or on milk and rice, they were apt to lose all their fur, presenting in their nude state a most ridiculous appearance. Few recovered from this state; but a change of diet, especially allowing them to help themselves to insects, enabled some to come round, resuming their natural covering. For the most part they were devoid of those pranks and tricks which are exhibited by the young of the *Macacus* and *Inuus*, though occasionally, and if not tied up, they would gambol about with cats, pups, or young monkeys.

The tawny and the black varieties of the Gibbon appear to mix indiscriminately together. The Karens in the Tenasserim provinces consider there is a third variety, which they name "Khayóo pábá," and the Taláins "Woot-o-padyn" (blue ape). This is probably the party-coloured or mottled phase of the animal, which occurs very often to the southward, in Malacca. The pale variety is more numerous in the district of Amherst than the black one.

Hylobates Lar extends southward to the Straits, and northward to the northerly confines of Pegoo (British Burma): whether it is found throughout Burma proper or not, I cannot ascertain. To the west of the spur dividing British Burma from Arakan, and throughout the latter province into the mountains

east of Chittagong, is found only *Hylobates Hoolock*. And further northward, in the forests and hills of Cachar, Munnipoor, and Assam, exists either a third species (not yet, I believe, distinguished by naturalists) or, if the same species as *H. Hoolock*, so strongly modified as to be larger and stouter, with a totally different call, and subject to vary in colour the same as *H. Lar*, which *H. Hoolock* in Arakan is not.

I subjoin the dimensions of an adult male specimen of *Hylobates Lar* shot near Hlyng bway, Tenasserim province, January 1855. But I believe it attains a larger size.

Length from crown to posteriors 1' 7 $\frac{5}{8}$ ".

Humerus 9 $\frac{1}{2}$ ", radius 9 $\frac{1}{2}$ ", hand 6"; total 2' 1".

Femur 7 $\frac{1}{2}$ ", tibia 7 $\frac{1}{2}$ ", foot 4 $\frac{1}{2}$ "; total 1' 7 $\frac{1}{2}$ ".

Height when standing upright about 2' 6".

I should not omit mentioning the peculiar manner in which this species drinks, which is by scooping up the water in its long narrow hand, and thus conveying a miserably small quantity at a time to its mouth. It is to be hoped the animal is not much troubled with thirst.

XLI.—On the Menispermaceæ.

By JOHN MIERS, F.R.S., F.L.S. &c.

[Continued from p. 261.]

18. HYPSPERPA.

THIS genus consists of a distinct group of plants, natives of Asia and the islands of the Oriental archipelago, the type of which is the *Cocculus cuspidatus* of Wallich. It is distinguished from *Cocculus* by its cyclical slender embryo imbedded in simple albumen, in which respect it approaches *Pericampylus*; but it differs from that genus and all others of the *Leptogoneæ*, except *Limacia*, in its cotyledons being accumbent (not incumbent). It is also notable for its unsymmetrical flowers; for few of its species agree in the number of sepals, petals, stamens, or ovaries—a very unusual occurrence in the order. The authors of the 'Flora Indica' and of the new 'Genera Plantarum' have refused to admit the validity of the genus, as they do not consider the imbrication of its inner sepals to be a character of any importance; and therefore they unite it with the genus *Limacia* of Loureiro. In this hasty determination they have entirely overlooked other circumstances which establish marked distinctions between the two genera. In all the species of *Limacia* the sepals are constantly thick and valvate in æstivation, while in every case in *Hypserpa* the sepals have broad, thin, membrana-